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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,778

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Yasuhiro Komiya

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EXAMINER

THOMAS, MIA M

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

10/30/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/521,778	KOMIYA ET AL.	
	Examiner	Art Unit	
	Mia M. Thomas	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>see attached</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2624

DETAILED ACTION

Response to Amendment

1. This Office Action is responsive to the applicant's remarks received on 21 January 2005. Claims 1-22 remain pending. The specification has been amended to identify that this application is a U.S. National Phase Application under 35 USC 371 of International Application PCT/JP03/09380. The preliminary amendment has been accepted and entered for instant application 10/521,778.

Priority

2. Receipt is acknowledged of a certified copy of the Japanese application (2002-218863) referred to in the oath or declaration or in an application data sheet. If this copy is being filed to obtain the benefits of the foreign filing date under 35 U.S.C. 119(a)-(d), applicant should also file a claim for such priority as required by 35 U.S.C. 119(b). If the application being examined is an original application filed under 35 U.S.C. 111(a) (other than a design application) on or after November 29, 2000, the claim for priority must be presented during the pendency of the application, and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior foreign application. See 37 CFR 1.55(a)(1)(i). If the application being examined has entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the claim for priority must be made during the pendency of the application and within the time limit set forth in the PCT and Regulations of the PCT. See 37 CFR 1.55(a)(1)(ii). Any claim for priority under 35 U.S.C. 119(a)-(d) or (f) or 365(a) or (b) not presented within the time period set forth in 37 CFR 1.55(a)(1) is considered to have been waived. If a claim for foreign priority is presented after the time period set forth in 37 CFR 1.55(a)(1), the claim may be accepted if the claim properly identifies the prior foreign application and is accompanied by a grantable petition to accept an

Art Unit: 2624

unintentionally delayed claim for priority. See 37 CFR 1.55(c). Applicant is encouraged to claim the benefits of the foreign filing date in the specification.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5, 9-13, 17-18, 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Parluski (US 5,523,786 A).

Regarding Claim 1: Parluski discloses an image processing system ("This invention relates to electronic cameras using solid state image sensors, and, in particular to color sequential electronic cameras." at column 1, line 8) comprising:

a photographing apparatus ("FIG. 3 shows a block diagram of a camera head and a base unit according to the invention..." at column 3, line 3);

and a processing apparatus (Refer to Figure 3, numeral 52), the photographing apparatus comprising:

a plurality of light-emitting devices for illuminating a subject and emitting light with the characteristics of a plurality of spectroscopic distributions independently varied in at least a

Art Unit: 2624

visible-light area (Refer to Figure 3, numeral 26a-c; "A color sequential video imaging system...a plurality of differently-colored light sources for illuminating a subject..." at column 12, line 37);

an image pick-up optical system which forms a subject image illuminated by the light-emitting devices ("A color sequential video imaging system...; an optical section for collecting light from said sources reflected from the subject..." at column 12, line 37);

an image pick-up device unit which picks-up the subject image formed by the image pick-up optical system and outputs an image signal ("FIG. 8 shows a third embodiment of the invention having a base unit with simple processing to provide RGB output signals..." at column 3, line 15);

and a control unit which controls an operation for capturing a plurality of subject spectroscopic images by selectively lighting-on the plurality of light-emitting devices in accordance with the characteristics of the spectroscopic distributions and by varying the selection of the plurality of light-emitting devices with the synchronization of the light-on operation and the operation for picking-up the image by the image pick-up device by a plurality of times (Refer to Figure 3, numeral 28),

the processing apparatus comprising: a calculating unit which performs desired image calculation from the image signal (Refer to Figure 3, numeral 42).

Regarding Claim 2: Parluski discloses wherein the control unit sets a group (These groups would be those as considered in reference to Figure 6; i.e. Frame Timing Group, Line Timing Group and Pixel Timing Group) comprising a plurality of devices having at least one light-emitting device from among the plurality of light-emitting devices in accordance with the

Art Unit: 2624

characteristics of the spectroscopic distributions ("The timing circuit 40 also controls the light emitting devices 26a, 26b, 26c via the LED control device 28..." at column 5, line 30), determines the light-on sequence of the plurality of devices in the set group, lights-on the light-emitting devices in the devices in accordance with the light-on sequence for selective light-on operation, and controls the plurality of spectroscopic images ("...and provides sync signals to the digital data link 24. The output of the output amplifier 50 on the image sensor 34 is processed by the correlated double sampling (CDS) circuit 52, shown also in FIG. 10, and an analog/digital (A/D) converter 54." at column 5, line 31).

Regarding Claim 3: Parluski discloses wherein the control unit sets a plurality of types of the groups and controls the operation for using the set groups necessary for application (Refer to Figure 3, numeral 42).

Regarding Claim 4: Parluski discloses wherein the control unit sets a group of the light-emitting groups (Refer to Figure 3, numeral 28) comprising the light-emitting devices of blue in the visible light area, the light-emitting devices of red in the visible light area, and the light-emitting devices of green in the visible light area, among from the plurality of light-emitting devices, sequentially lights-on the light-emitting devices of the group every image pick-up frame, and controls the operation for picking-up a three-primary-color moving image by the image pick-up device unit (Refer to Figure 3, numeral 26a-26c and further Figures 11a-11c).

Regarding Claim 5: Parluski discloses wherein the photographing apparatus further comprises: a photographing operating unit which inputs at least an instruction for starting a spectroscopic

Art Unit: 2624

image photographing operation, and the control unit controls the operation for capturing the plurality of subject spectroscopic images in accordance with the input of the instruction for starting the spectroscopic image photographing operation from the photographing operating unit ("Therefore, the sensor exposure should be controlled, in order to provide acceptable images over the range of distances expected to be encountered. The exposure level determination circuit 42 determines the exposure level of a particular frame by calculating, for example, the average digital code level of the pixels of that frame. Alternately, the peak code level can be measured. The circuit then compares the level with a reference level, to determine whether the average or peak signal level is within a range of acceptable levels. If the level is outside the desired range, the exposure level is adjusted during the next capture of the same type (i.e., luminance, red, or blue) of frame." at column 5, line 62).

Regarding Claim 9: Parluski discloses wherein the image pick-up device unit comprises: a spectroscopic unit which performs the spectroscopy of incident light into light with a plurality of wavelengths (Refer to Figure 5, numeral 100, 110 and 120); and a plurality of image pick-up devices which pick-up the light with the plurality of wavelengths subjected to the spectroscopy by the spectroscopic unit (Refer to Figure 3, numeral 22 and numeral 34).

Regarding Claim 10: Parluski discloses wherein the image pick-up device unit comprises a color image pick-up device having a color filter array (Refer to Figure 3; "A block diagram of an electronic color sequential camera according to the invention is shown in FIG. 3 in the form of a camera head 20 connected to a base unit 22 by a digital data link 24. Although this invention is not limited to a specific application, a color sequential camera head 20 of the type described

Art Unit: 2624

herein may be used in a medical application in the elongated insertion portion of an endoscope.”
at column 4, line 1).

Regarding Claim 11: Parluski discloses wherein the photographing apparatus further comprises: a spectrum sensor, which senses the characteristics of the spectroscopic distributions of the light-emitting devices (“In the camera head 20, red, green, and blue light emitting devices (LEDs) 26a, 26b, 26c are activated by an LED control device 28 to emit red, green, and blue light beams outward from the camera head 20 toward a subject 30. The subject 30, being in a confined space, is illuminated only by the red, green and blue light beams. Red, green and blue light reflected from the subject 30 is then collected by a lens 32 and directed to an image sensor 34.” at column 4, line 12).

Regarding Claim 12: Parluski discloses wherein the photographing apparatus further comprises a spectrum sensor, which senses the characteristic of the spectroscopic distribution of ambient light (“...the invention provides for an electronic color sequential camera including a plurality of light sources arranged to sequentially illuminate a subject; means for activating a) two or more of said light sources to generate a luminance light beam and b) selected ones of said light sources to generate at least first and second chrominance light beams, the luminance and chrominance light beams being generated in a predetermined sequence; and an image sensor arranged to receive the luminance and chrominance light beams reflected from the subject and to generate therefrom a color sequential signal comprising a sequence of luminance and chrominance image components, whereby the camera is more sensitive to luminance temporal resolution than to chrominance temporal resolution.” at column 2, line 17).

Art Unit: 2624

Regarding Claim 13: Parluski discloses wherein the photographing apparatus further comprises an abutting portion, which is abutted to the subject at one end thereof (Refer to Figure 3, numeral 20; "Camera Head").

Regarding Claim 17: Parluski discloses wherein the processing apparatus further comprises an image memory unit which stores the subject spectroscopic image photographed by the photographing apparatus, and the calculating unit calculates a desired image from the image signal stored in the image memory unit ("...a plurality of memory units coupled to said image sensor for separately storing the luminance and chrominance image components." at column 9, line 55).

Regarding Claim 18: Parluski discloses wherein the calculating unit calculates a signal for displaying the subject image which is color-reproduced at the high fidelity level based on the subject spectroscopic image stored in the image memory unit ("Therefore, the sensor exposure should be controlled, in order to provide acceptable images over the range of distances expected to be encountered. The exposure level determination circuit 42 determines the exposure level of a particular frame by calculating, for example, the average digital code level of the pixels of that frame. Alternately, the peak code level can be measured. The circuit then compares the level with a reference level, to determine whether the average or peak signal level is within a range of acceptable levels." at column 5, line 55).

Regarding Claim 20: Parluski discloses wherein the calculating unit determines or analyzes the subject based on the subject spectroscopic image stored in the image memory unit and outputs the determining or analyzing result ("In this embodiment, only readout register 36a is used, to

Art Unit: 2624

provide a single register video output signal, although the CCD is capable of providing dual output signals." at column 4, line 28).

Regarding Claim 21: Parluski discloses wherein the image pick-up device unit changes a frame rate for the image pick-up operation ("The temporal frame readout sequence of the invention, shown in FIG. 2, indicates that there are twice as many luminance frames as red or blue frames." at column 3, line 62).

Regarding Claim 22: Parluski discloses wherein the photographing apparatus further comprises a photographing operating unit for inputting at least an instruction for starting the spectroscopic image photographing operation, and the control unit controls the operation for capturing the plurality of subject spectroscopic images in accordance with the input of the instruction for starting the operation for photographing the spectroscopic image from the photographing operating unit (Refer to the detailed elements of Figure 3).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6, 7, 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parluski (US 5,523,786) in combination with Williams (US 2003/0107652 A1.)

Regarding Claim 6:

Art Unit: 2624

Parluski discloses all the claimed elements of Claims 1 and 5 as stated above in the 102(b) rejection.

Parluski does not specifically disclose that the photographing operating unit comprises a pressing button switch, and the control unit controls the operation for changing the group upon pressing the button switch, however,

Williams teaches wherein the photographing operating unit comprises a pressing button switch, and the control unit controls the operation for changing the group upon pressing the button switch (Refer to Figure 22, numeral 717-pushbutton switch for image pickup device 719 and Figure 1, numeral 37, external button switch).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to add together the press button switch and a control unit with controls the operation of the press button switch as taught by Williams to the photographing operating unit as disclosed by Parluski because, by depressing the press button switch, it will magnify the image and this is a more efficient manner of controlling and operating the image processing system which makes the system economically more useful and compact. (Williams)

Regarding Claim 7:

Parluski discloses all the claimed elements of Claims 1 and 5 as stated above in the 102(b) rejection.

Parluski does not specifically disclose that the control unit controls light-on timings of the devices of the changed group, upon pressing the button switch, however,

Art Unit: 2624

Williams teaches wherein the control unit controls light-on timings of the devices of the changed group, upon pressing the button switch ("Referring to FIG. 9 in conjunction with FIG. 3 and FIG. 10 a dental video camera 110 includes a remote control transmitter 111. The remote control transmitter 111 has a multiple-pin female connector 112 and two batteries 113. The batteries 113 are either rechargeable or replaceable and are a source of power to the two lamps 30. The multiple-pin male connector 34 is electrically coupled to the multiple-pin female connector 112 of the remote control transmitter 111. A receiver remotely couples the thermal printer, the video processor and the recording device to the remote control transmitter 111 so that one of the external switches 37 controls each of the thermal printer, the video processor and the recording device." at paragraph [0080]).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to utilize the control unit to control the light on-timing of the device upon pressing the switch button as taught by Williams to the photographing operating unit as disclosed by Parluski because, by depressing the press button switch, it not only controls the device more efficiently, it can also perform multiple tasks for example, it will magnify the image with the pressing of this button and this is a more effective manner of controlling and operating the image processing system which makes the system economically more practical and compact. (Williams)

Regarding Claim 14:

Parluski discloses all the claimed elements of Claims 1 and 13 as stated above in the 102(b) rejection.

Art Unit: 2624

Parluskı does not specifically disclose that the abutting portion comprises a flexible material with cylindrical shape, however,

Williams teaches wherein the abutting portion comprises a flexible material with cylindrical shape ("Referring to FIG. 32 in conjunction with FIG. 33 and FIG. 34 a dental video camera 1110 includes housing 1111, an adjustably focusing lens and CCD camera system 1112, an iris 1113, a plurality of light emitting diodes 1114, a circuit board 1115 and video-processing circuitry 1116 and a flexible, electrical cable 1117. The housing 1111 has an elongated cavity with a distal end and a proximal end. The adjustably focusing lens and CCD camera system 1112 is disposed within the elongated cavity of the housing 1111." at paragraph [0093]).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to utilize a flexible material with cylindrical shape as taught by Williams to the photographing operating unit as disclosed by Parluskı because, the material and shape allow for the processing apparatus to be easily "disposed within and slidably coupled to the elongated cavity of the housing" and "a plurality of light emitting diodes that are optically coupled to the charge coupled device", are easily stored and "a sleeve that is slidably coupled to the housing" makes the system more practically and efficiently modeled. Additionally, "The sleeve is able to move laterally back and forth and has achromatic lenses and fixed lenses. (Williams, abstract)

Regarding Claim 15:

Parluskı discloses all the claimed elements of Claims 1 and 13 as stated above in the 102(b) rejection.

Art Unit: 2624

Parluski does not specifically disclose that the abutting portion comprises a material, which rejects or reduces the influence from ambient light, however,

Williams teaches wherein the abutting portion comprises a material, which rejects or reduces the influence from ambient light ("The video-scope 810 includes two light guides made of a transparent plastic material having a condensing portion, a guiding portion and a shedding portion. Therefore this video-scope 810 can be assembled easily in a low cost compared with that of the prior art while maintaining a good quality image. In addition, since the light rays propagate inside the light guide, the heat of the light rays hardly influence the charge coupled device unit and its drive circuit. The heat of the light rays also does not influence the video circuit since the concave mirror shields the video circuit from heat of the light rays. " at paragraph [0090]).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to utilize a material, which rejects or reduces the influence from ambient light as taught by Williams to the photographing operating unit as disclosed by Parluski because, the material will aid in the rejection and reduction of the influence of light so as to perform more fluently with the light-on sequences while the abutting portion is "disposed within and slidably coupled to the elongated cavity of the housing" and "a plurality of light emitting diodes that are optically coupled to the charge coupled device", are easily stored and "a sleeve that is slidably coupled to the housing" makes the system more practically and efficiently modeled.

Additionally, "The sleeve is able to move laterally back and forth and has achromatic lenses and fixed lenses. (Williams, abstract)

Art Unit: 2624

Regarding Claim 16:

Parluskis discloses all the claimed elements of Claims 1 and 13 as stated above in the 102(b) rejection.

Parluskis does not specifically disclose that the abutting portion is detachable to a casing of the photographing apparatus, however,

Williams teaches wherein the abutting portion is detachable to a casing of the photographing apparatus ("Referring to FIG. 13 in conjunction with FIG. 14 and FIG. 15 a dental video camera 310 includes housing 311, an optical system 312 and a charge coupled device camera. The housing 311 has an elongated cavity 314 that has a distal portion and a proximal portion. The optical system 312 is disposed in the distal portion of the elongated cavity 314 of the housing 311. The charge coupled device camera is disposed in the proximal portion of the elongated cavity 314 of the housing 311. The optical system 312 includes a adjustably focusing lens system 315, a fixed focusing lens system 316 and a sheath 317 which has an optical window 318." at paragraph [0082]).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to utilize the abutting portion [which is] detachable to a casing of the photographing apparatus as taught by Williams to the photographing operating unit as disclosed by Parluskis because, while attached or detached, the abutting portion "can rotate freely and [can] stop at an optional position." Additionally, "The sleeve is able to move laterally back and forth and has achromatic lenses and fixed lenses. (Williams)

Art Unit: 2624

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parluski (US 5,523,786) in combination with Konomura et al. (US 4,845,553).

Regarding Claim 19:

Parluski discloses all the claimed elements as stated above in the 102(b) rejection.

Parluski does not specifically disclose that the processing apparatus calculates profile information necessary for calculating the signal for displaying the subject image, which is color-reproduced at the high fidelity level based on the data captured by the photographing apparatus.

Konomura teaches wherein the processing apparatus calculates profile information necessary for calculating the signal for displaying the subject image which is color-reproduced at the high fidelity level based on the data captured by the photographing apparatus ("The electric signals are then converted into TV signals by the observing device 2 to be displayed on the TV monitor 4 for observation." at column 3, line 6).

- At the time the invention was made, it would have been obvious to one of ordinary skill in the art to utilize calculates profile information necessary for calculating the signal for displaying the subject image as taught by Williams with the photographing apparatus as disclosed by Parluski because the calculation profile information allows the user to perform multiple user operations and manipulations of the image data in a compact and efficient processing device that is all inclusive to the overall image processing device. Additionally, "The compressor of this type includes an operating circuit which employs complicated algorithms to compress data, and

Art Unit: 2624

therefore provides compressed data through very complicated calculations.” at column 2, line 13 (Konomura).

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parluski (US 5,523,786) in combination with Mizumaki (US 6,006,041).

Regarding Claim 8:

Parluski discloses all the claimed elements as stated above in the 102(b) rejection.

Parluski does not specifically disclose that the control unit controls the operation for starting the image pick-up operation by the image pick-up device unit after starting the light-on operation of the light-emitting device and for ending it before lighting-off the light-emitting device, however,

Mizumaki teaches wherein the control unit controls the operation for starting the image pick-up operation by the image pick-up device unit after starting the light-on operation of the light-emitting device and for ending it before lighting-off the light-emitting device (Refer to Figure 5; “FIG. 5 shows a control image of an LED light-on timing in the first embodiment of the invention.” At column 2, line 39; “The light source 18 includes the LEDs 11 and 12 of FIG. 1. “The control circuit 19 controls a light-on timing of the light source 18 in accordance with the signal from the mask position detecting circuit 16 and the angular displacement information from the vibration detection circuit 17.” at column 5, line 14).

Art Unit: 2624

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to facilitate the use of the control unit control[ling] the operation for starting the image pick-up operation by the image pick-up device unit as taught by Mizumaki in combination with the photographing apparatus as disclosed by Parluski because the control unit allows the user to interpret the "delay time" and the "waveform indications" as observed. This control unit allows the user to specifically time the light source to release the signal to be analyzed or manipulated. (Mizumaki).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,967,644 B1

US 7,058,213

US 6,940,545 B1

US 6,359,680

US 6,776,614 B2

US 6,431,870

US 6,711,355 B1

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mia M. Thomas whose telephone number is 571-270-1583. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

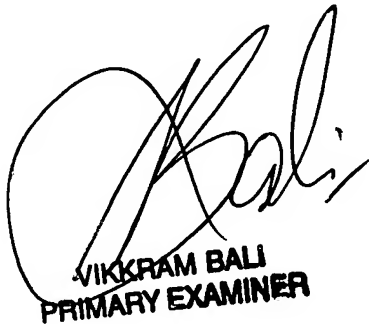
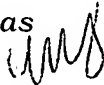
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikram Bali can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2624

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mia M Thomas
Examiner
Art Unit 2624

Mia M. Thomas



VIKKRAM BALI
PRIMARY EXAMINER